

*freezertech*

**Freezertech Vertical Plate Freezers**  
Engineered for capacity



## Vertical Plate Freezers

Freezertech vertical plate freezers are world renowned for their strong, long lasting construction, with an ergonomic and hygienic design.

The product is simply poured into the pockets between the plates and is frozen. The vertical plate freezer is available in standard block thicknesses of 75 and 100mm, but models to suit any block thickness can be built, such as 50 and 65mm blocks.

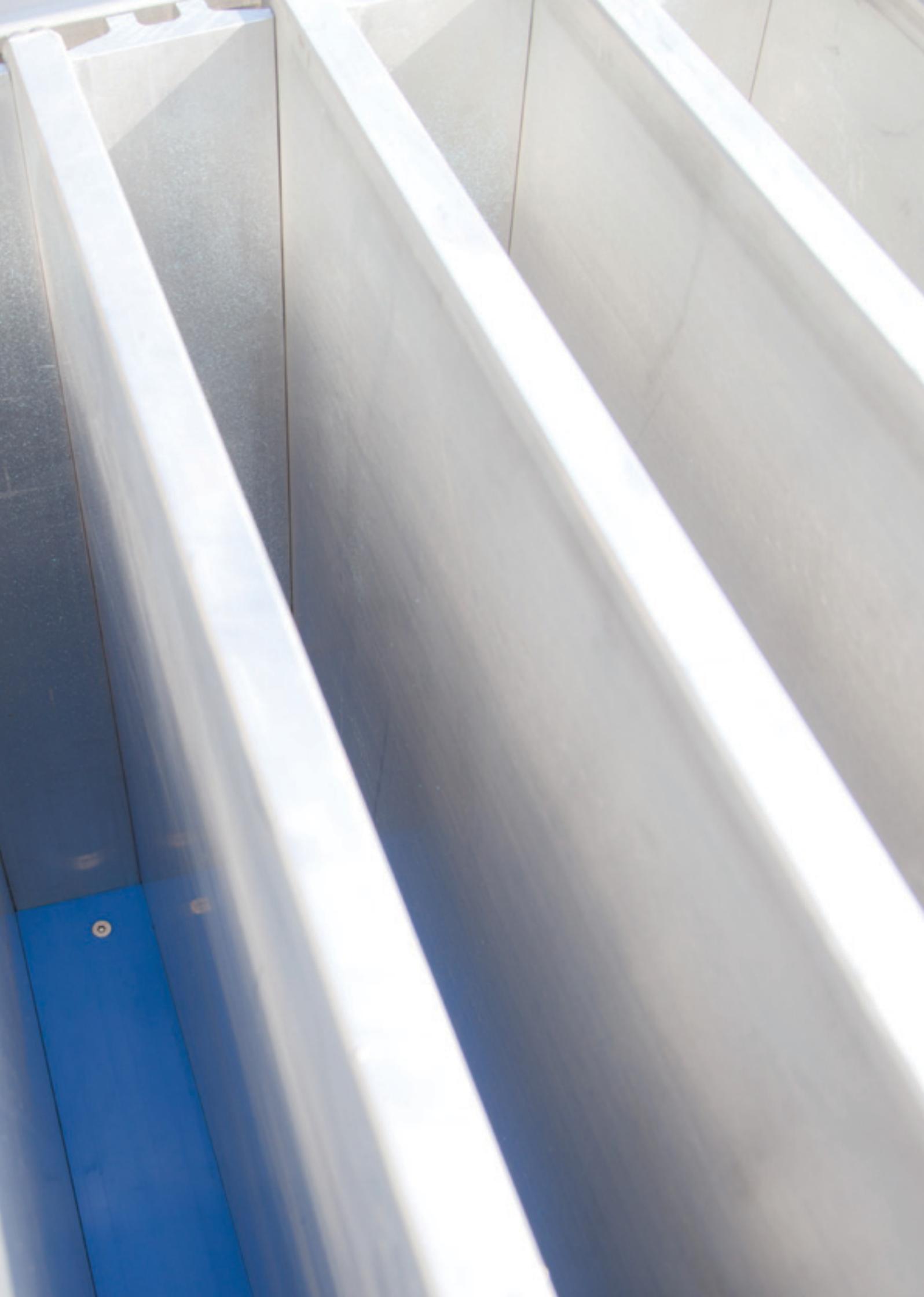
The vertical plate freezer enables rapid freezing of raw food products through its direct contact method of freezing, which offers a significant energy saving and reduced freezing time over traditional air blast freezers.

These cost savings are also benefitted by the fact the product is poured directly into the freezer, not requiring expensive packaging which can increase freezing time and is liable to get damaged during use.

Semi-automated loading and unloading systems allow a high product throughput for very low labour costs.

Vertical plate freezers are of significant importance in the raw frozen foods industry, where lack of packaging means the product has to be well contained within the freezer, and the rapid dual-contact freezing action is essential to avoid discolouration, enzymatic and cellular breakdown in the food products, significantly ones with high water content where ice crystal formation from slow freezing becomes a problem.





## Adjustable Construction

Built with adjustable front spacers - ensuring maximum product tightness throughout the life of the freezer.

The front spacers are of food safe Aluminium which enables rapid cooling to completely minimise drip loss of product.

All lifting arm covers (UHMW or Aluminium) are dual-pinned to prevent any contraction when freezing, to further help prevent against losses.

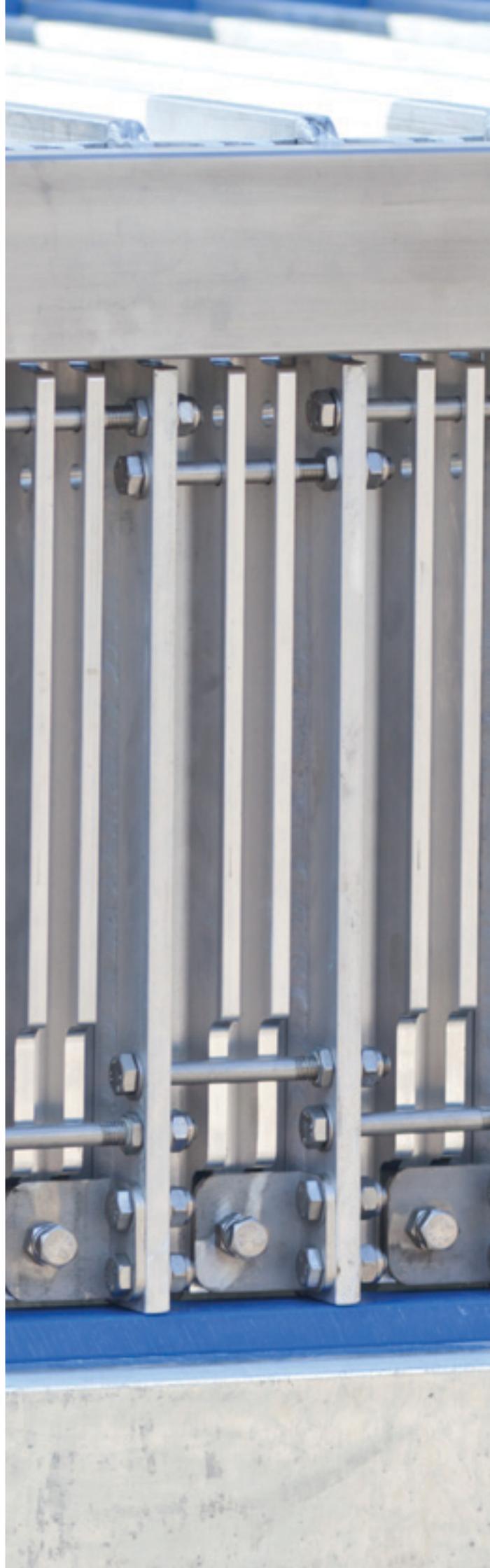
## Stainless Steel Fixings

All bolts, fixings & fittings are of grade 304L for maximum life and hygiene.

Includes

- Bolts & Nuts
- Plate Adjusters
- Link Bolt Rollers
- Refrigerant Headers
- Hydraulic Cylinders
- Hydraulic Pipe & Fittings
- Front Top Member
- Rear Deflector Cover

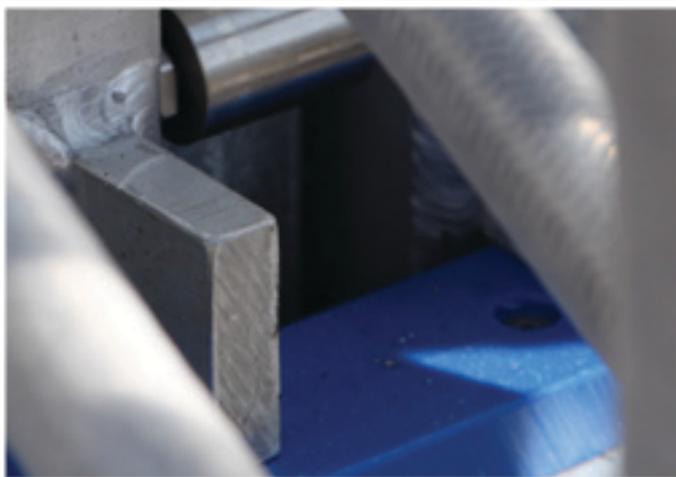
Optional full 304L Stainless Steel framework is available, or Stainless Steel / HDPE Covers can also be supplied



## High Visibility Plastics

All plastics are approved for food contact, and are made from high visibility UHMW & HE Polyethylene

Generous 20mm low friction wear strips are provided for the plates, for long life and insulation against the cold plates.



## Leak-free Hose Joints

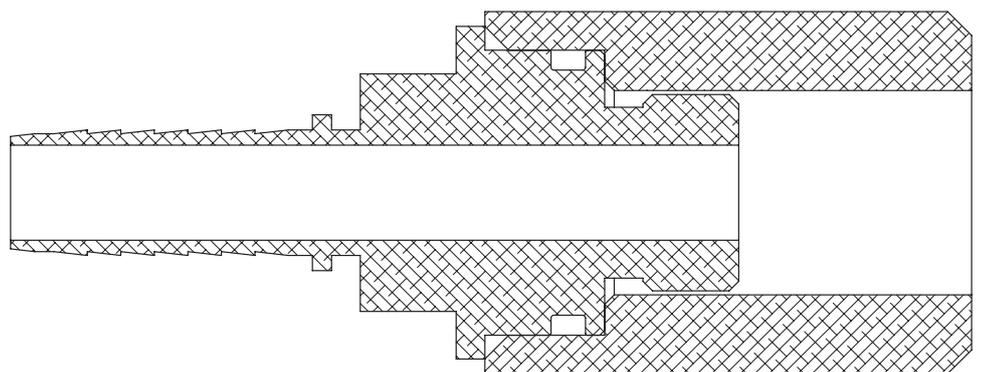
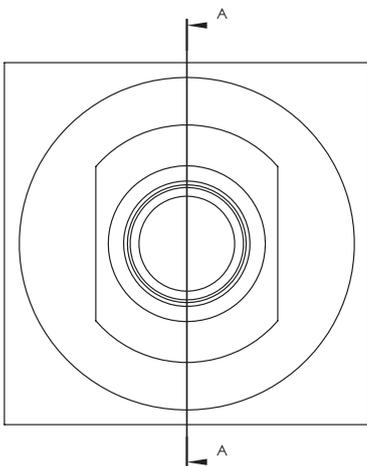
Special anodized Aluminium hose connections into the plate ensure a completely leak free service life.

The hose features a male connection into the plate (which then cannot unscrew in operation), and uses a circumferential O-ring which does not rely on compression to seal; unlike tapered thread or gasket designs.

Anodized Aluminium fittings prevent any galvanic corrosion of the sealing face in marine environments, and with a backup O-ring protecting the main sealing face, you can be sure of dependable production.

All the hoses feature spiral-convoluted PTFE inner hose, for maximum flexibility, covered with a 304L Stainless Steel braid, and an optional crimped Silicone sleeve on the outside - which prevents ice build up potentially damaging the hose, and maintains a hygienic cleaning solution.

All plates are fitted with Helicoil's from new to prevent any thread damage during service.

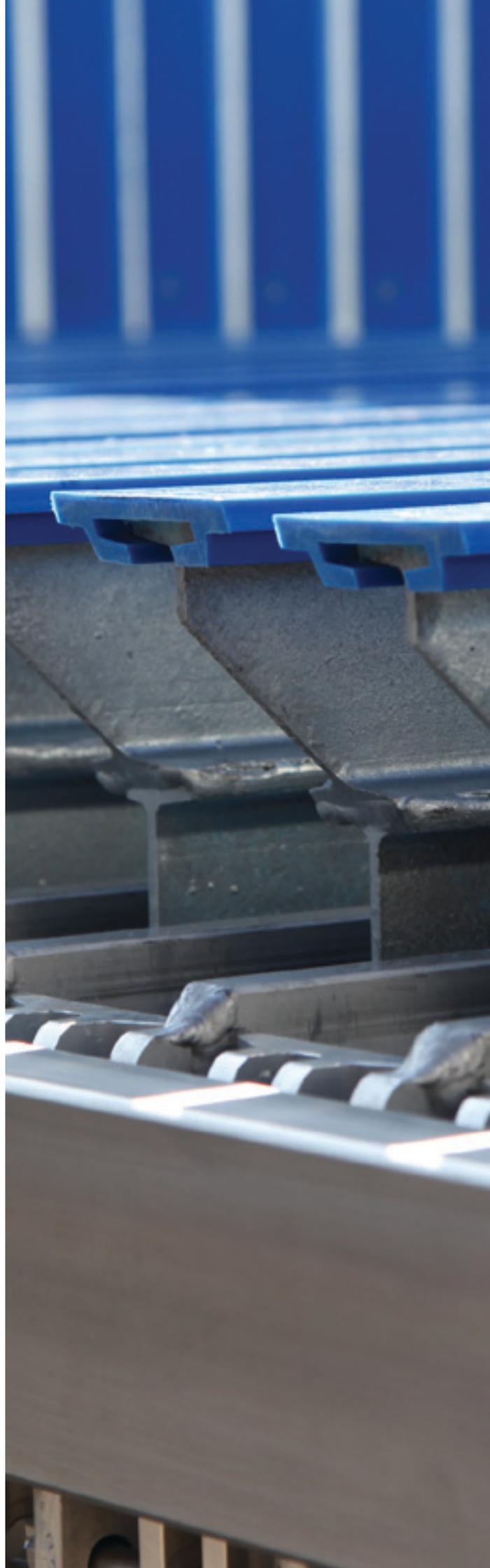


SECTION A-A

## Extended Lift Cleaning

As an optional extra, extended cylinder stroke can be supplied to enable the lifting arms to be brought out of the freezing during cleaning cycles - allowing easy unobstructed access to the bottom of the arms.

The arms are located in place still via small plastic guides to minimise the time spent going back into production



## Engineered for Capacity

Freezertech's in depth technical knowledge of refrigeration & valve stations allow us to offer a unique perspective when it comes to installing plate freezers.

Compared to traditional systems, a Freezertech designed installation can typically achieve savings up to 10% on the cycle time.

Comparing a 3" block on Ammonia at -40°C

### Traditionally

107 minute freezing time  
5 minute defrost time  
20 minute unloading / reloading time

Total = 132 minute

### Freezertech High Capacity

100 minute freezing time  
1.5 minute defrost time  
20 minute unloading / reloading time

Total = 121.5 minute

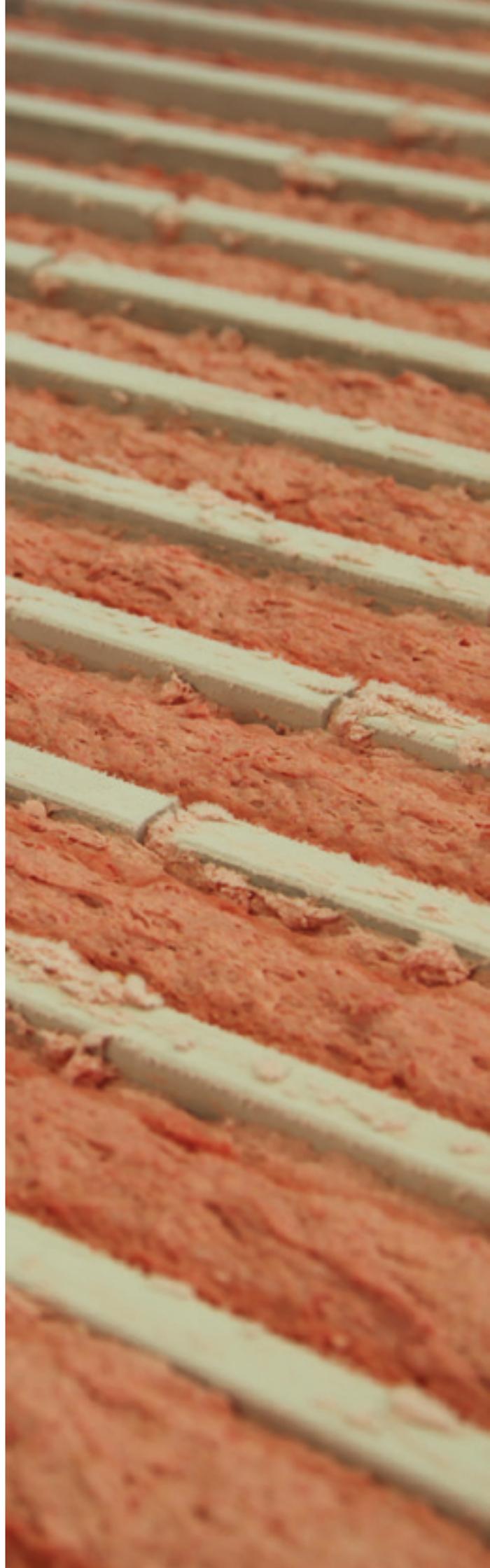
Cycle time saving = 8%

Production increase

# 8.7%

Same Refrigerant, same Temperature

**Better knowledge.**



## Traditionally

### **Under sized Suction Valves**

Leads to increased pressure drop in the lines = higher temperature in the plates

### **Too much refrigerant overfeed**

Leads to increased pressure drop in the lines = higher temperature in the plates. Any excess liquid must be lifted back to the receiver and this costs energy

### **Under sized Hot Gas lines**

Low Capacity = long defrost times, and higher heat input into the product. Soft spots on the product affect the value

### **Pressure relief valve draining of the freezer during defrost**

Low capacity = longer defrost times, and higher heat input into the product. Works on pressure only, so can waste hot gas = wasted energy & money

### **Raising condensing pressure during defrost**

To try and make up for under sized lines = wasted energy & higher heat input into the product.

### **Liquid Hammer from incorrect piping**

Can damage / destroy valves & hoses. Can extend defrost times

### **Visual Inspection Only**

Leads to over freezing & over defrosting. Wastes energy and can damage product. Not defrosting properly can damage lifting arms & plates

## Freezertech High Capacity

### **Correctly sized Valves & Hoses**

Lowest possible pressure drop in suction line, especially important at cycle start where the capacity is highest

### **Lower Overfeed Rates**

Carefully calculated to prevent excess refrigerant feed and maintain fastest possible freezing times.

### **High Capacity Defrost**

Shortest possible defrost times, with maximum pressure differential. Increased production & lower heat input into the product = higher product value. Correct draining ensures no wasted hot gas & higher plant efficiency.

### **Lowers condensing pressure during defrost**

Saves energy whilst defrosting through a lower condensing pressure (approx 1% saving for every 1 °C)

### **No liquid hammer**

“Soft Start” defrost and draining allows for a high capacity, without any risk of damage from liquid hammer.

### **Intelligent Control**

Temperature sensors ensure a defrost is carried out properly before allowing hydraulic operation. Sensors are available to monitor the temperature of the product throughout the cycle also.

# Highest possible capacity, at the lowest possible temperature

- Higher product value
- Increased production
- Reduced energy cost
- Reduced Ammonia leaks

# Capacity & Dimensions

Freezer Size	10 Station			16 Station		
Block Thickness / Weight	2" (25kg)	3" (38kg)	4" (50kg)	2" (25kg)	3" (38kg)	4" (50kg)
Batch Load	250 kg	375 kg	500 kg	400 kg	600 kg	800 kg
Freezer Length	1466 mm	1726 mm	1986 mm	1895 mm	2311 mm	2727 mm
Freezer Size	20 Station			26 Station		
Block Thickness / Weight	2" (25 kg)	3" (38 kg)	4" (50 kg)	2" (25 kg)	3" (38 kg)	4" (50 kg)
Batch Load	500 kg	750 kg	1000 kg	650 kg	975 kg	1300 kg
Freezer Length	2181 mm	2701 mm	3221 mm	2610 mm	3286 mm	3962 mm
Freezer Size	30 Station			36 Station		
Block Thickness / Weight	2" (25 kg)	3" (38 kg)	4" (50 kg)	2" (25 kg)	3" (38 kg)	4" (50 kg)
Batch Load	750 kg	1125 kg	1500 kg	900 kg	1350 kg	1800 kg
Freezer Length	2988 mm	3768 mm	4548 mm	3417 mm	4353 mm	5289 mm

Based on a 1060 x 530mm block size

## Standard Block Sizes

- 1060 - 530mm
- 1210 - 400mm
- 800 - 800mm

3" and 4" block thicknesses

Other sizes / thicknesses on request

## Standard Refrigerants

- R22
- R404
- R507
- R717
- R744 (CO<sub>2</sub>)

Others available on request





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## Freezertech Vertical Plate Freezers

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**Freezertech Horizontal Plate Freezers**  
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## Horizontal Plate Freezers

Freezertech horizontal plate freezers are world renowned for their strong, long lasting construction, with an ergonomic and hygienic design.

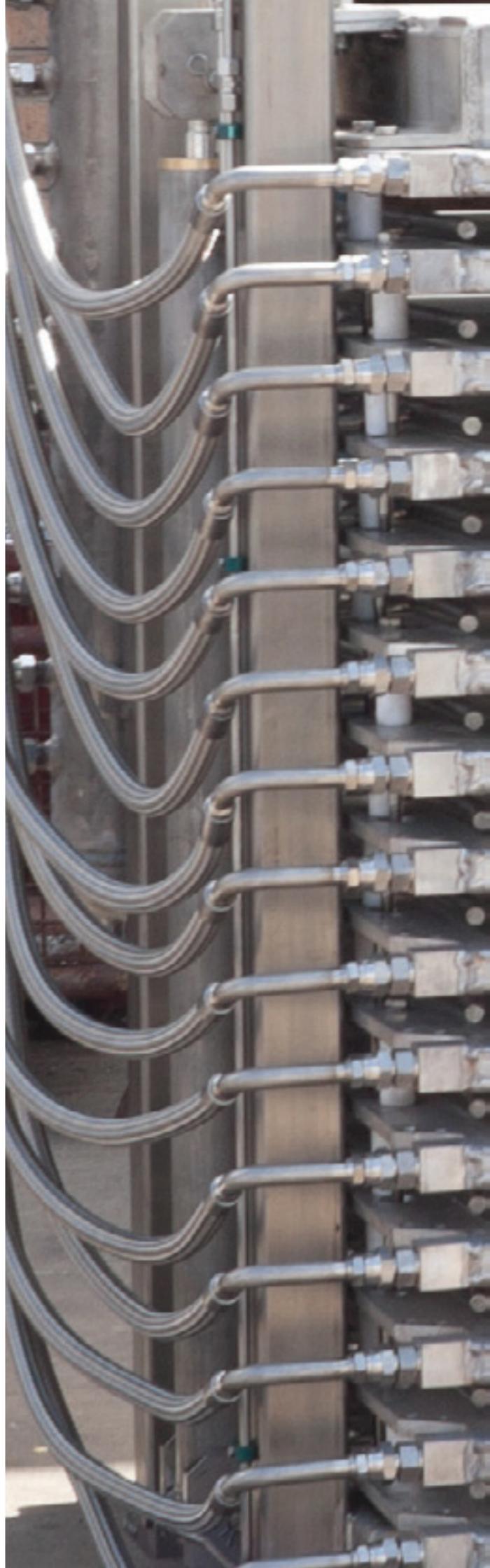
The product is generally placed in heavy duty freezing trays before going in the pockets between the plates to be frozen. The horizontal plate freezer comes in a wide range of plate openings to accomodate various tray sizes.

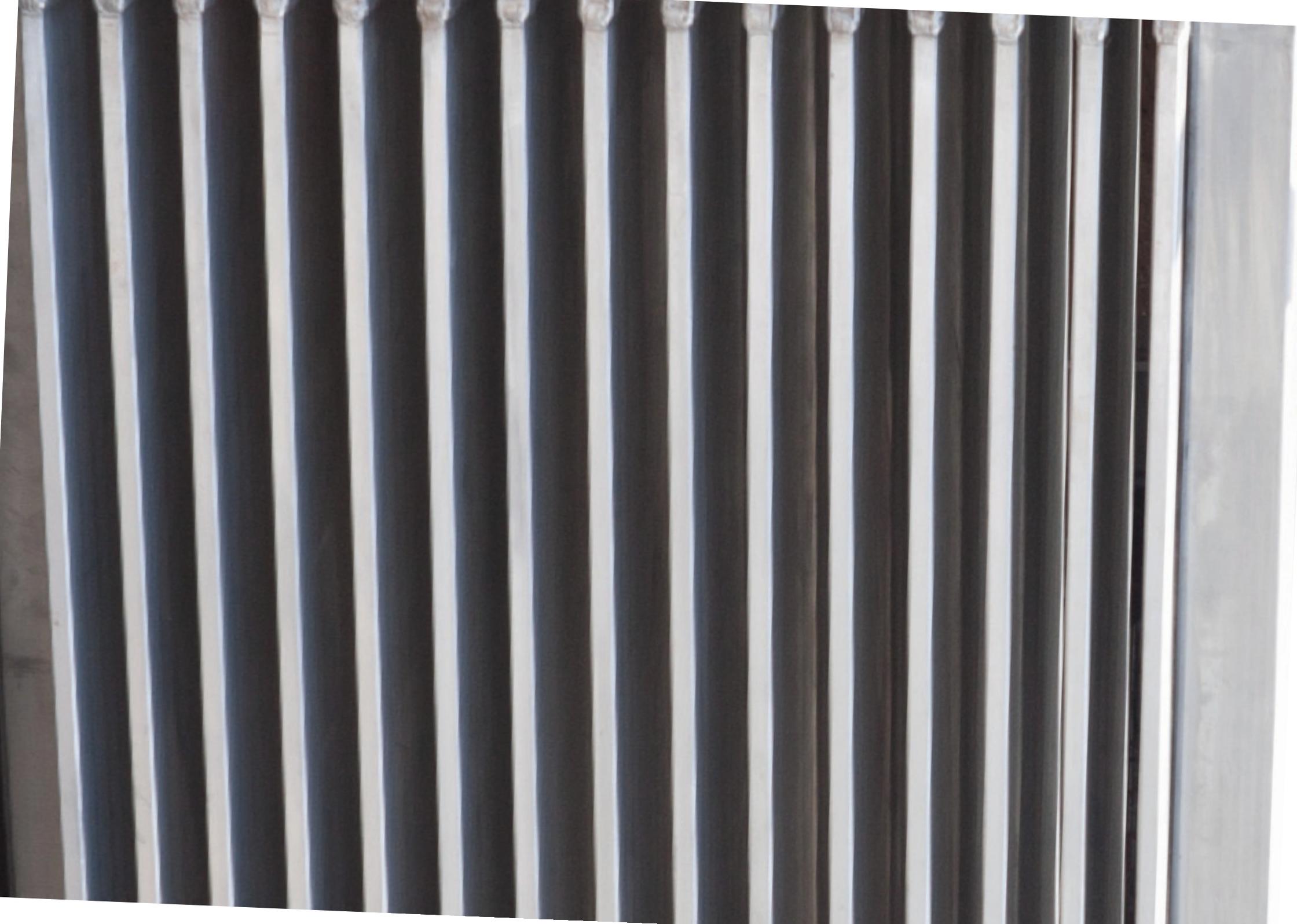
The horizontal plate freezer enables rapid freezing of food products through its direct contact method of freezing, which offers a significant energy saving and reduced freezing time over traditional air blast freezers.

These cost savings are further enhanced by the fact that horizontal plate freezers are leaders in freezing capacity to footprint ratio - saving valuable production space.

Automated loading and unloading systems allow a high product throughput for very low labour costs.

Horizontal plate freezers are of significant importance in the fishing industry, where floor space is at a premium, and the rapid dual-contact freezing action is essential to avoid discolouration, enzymatic and cellular breakdown in the food products, significantly ones with high water content where ice crystal formation from slow freezing becomes a problem.





## Stainless Steel Construction

Built in full Stainless Steel construction, the Freezertech HPF has set a new standard in plate freezer design and ergonomics, allowing for long life in harsh marine environments, and easy cleaning 100% of the time.

Specific attention has been paid to every feature, down to the last millimeter. The Freezertech horizontal plate freezer is designed throughout to ensure consistent, reliable high capacity freezing.

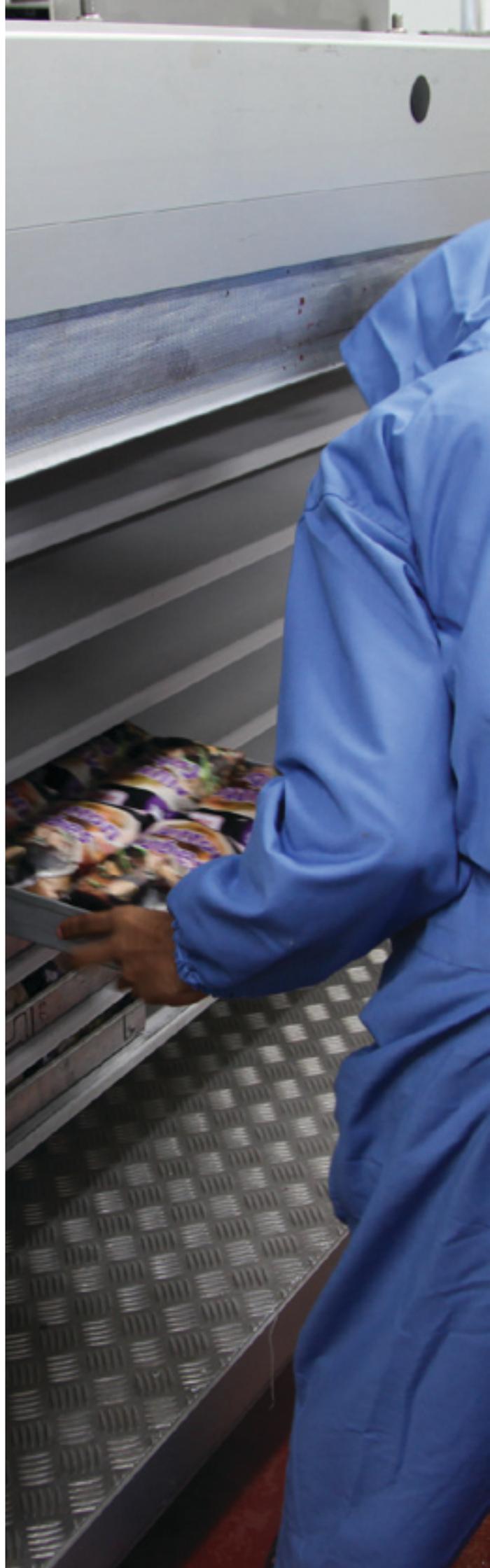
## Stainless Steel Fixings

All bolts, fixings & fittings are of grade 304L for maximum life and hygiene.

Includes

- Bolts & Nuts
- Plate Connectors
- Refrigerant Headers
- Hydraulic Cylinders
- Hydraulic Pipe & Fittings
- Dial Panel Mounts
- Tray Guides
- Sea Rails / Marine Locks

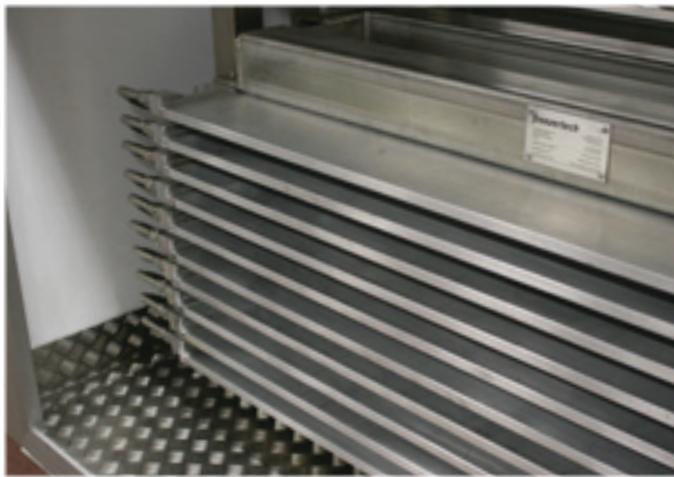
Stainless Steel or HDPE Covers can also be supplied & fitted



## High Visibility Plastics

All plastics are approved for food contact, and are made from high visibility UHMW Polyethylene & Acetal

Individual plates run on Stainless guides with 4 direction wear pads per plate for smooth running on land or at sea.



## Leak-free Hose Joints

Special Stainless Steel hose connections into the plate ensure a completely leak free service life.

The hose features a male adaptor into the plate (to allow for correct setting of the hose angle), and uses a circumferential O-ring which does not rely on compression to seal; unlike tapered thread or gasket designs.

The fittings prevent any corrosion of the sealing face in marine environments, with a backup O-ring protecting the main sealing face, you can be sure of dependable production.

All the hoses feature spiral-convoluted PTFE inner hose, for maximum flexibility, covered with a 304L Stainless Steel braid, and an optional crimped Silicone sleeve on the outside - which prevents ice build up potentially damaging the hose, and maintains a hygienic cleaning solution.

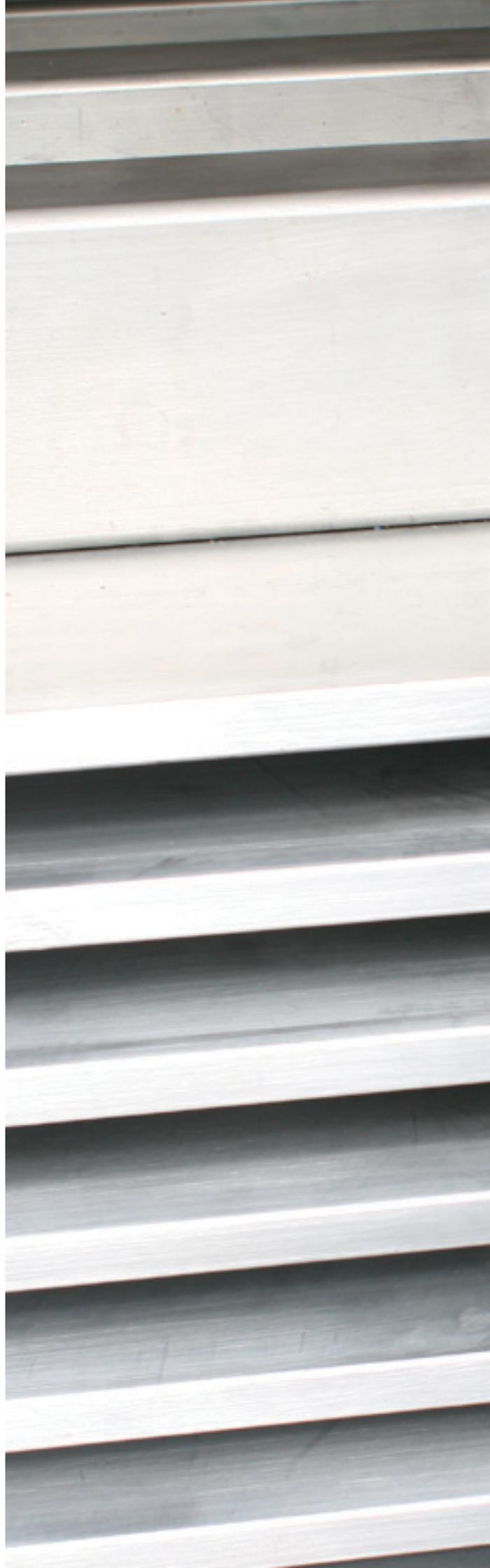
All plates are fitted with Helicoil's from new to prevent any thread damage during service.



## Insulated Cabinets

As an optional extra, our horizontal plate freezers can be supplied with a variety of insulated cabinets, allowing greater protection for operators from the cold plates, and the ability to seal off the freezer for hygiene reasons.

The cabinets are available in White or Stainless Steel, and are finished with an anodized Aluminium fascia.



## Engineered for Capacity

Freezertech's in depth technical knowledge of refrigeration & valve stations allow us to offer a unique perspective when it comes to installing plate freezers.

Compared to traditional systems, a Freezertech designed installation can typically achieve savings up to 10% on the cycle time.

In the photographed factory, our Horizontal Plate freezers running on CO<sub>2</sub> were put alongside existing CO<sub>2</sub> freezers from another company, and it was found that the Freezertech HPF's froze in only 60 minutes compared to 75 minutes for the existing CO<sub>2</sub> plate freezers.

Accurate calculations are made for every order and our state of the art calculations allow us to consistently refine and improve our plates in order to gain the best possible capacity - improving your production.

Production increase

# 18%

Same Refrigerant, same Temperature

**Better knowledge.**



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### **Intelligent Control**

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# Highest possible capacity, at the lowest possible temperature

- Higher product value
- Increased production
- Reduced energy cost
- Reduced Ammonia leaks

## Capacity & Dimensions

Size	“Beck” Block 525 x 295 x 62 7.5kg	Shrimp Block 295 x 195 x 70 2.5kg	Russian Block 800 x 250 x 65 11kg	Surimi / MDM Block 600 x 400 x 55 10kg
1550 x 1120	10	25	6	4
1850 x 1120	12	30	8	6
2050 x 1120	12	30	8	6
2450 x 1120	16	40	12	8
1550 x 1227	10	30	6	6
1850 x 1227	12	36	8	9
2050 x 1227	12	40	8	10
2450 x 1227	16	48	12	12

**We can cater for customized plate sizes very easily on request**

Dimensions:

Freezer Length = Freezing Area +600mm

Freezer Width = Freezing Area

### Standard Refrigerants

- R22
- R404
- R507
- R717
- R744 (CO<sub>2</sub>)

Others available on request





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## Freezertech Horizontal Plate Freezers

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